

CLAIMS

1. Core back for an axial flow electrical machine,
5 said core back being essentially ring shaped and
comprising:

a plurality of stacked, ring shaped sheets (310) of
soft magnetic material,

a barrier of electrical resistance arranged between
10 two adjacent sheets of soft magnetic material for
reducing effects of eddy currents,

wherein each sheet of soft magnetic material in at
least a subset of said plurality of stacked, ring shaped
sheets of soft magnetic material includes a plurality of
15 circumferentially arranged tooth openings (312), each
tooth opening being at least partially defined by a first
tooth engaging portion (424) and a second tooth engaging
portion (430), said tooth openings are extending in a
direction substantially parallel with an axial direction
20 of said core back through each said sheets,

additionally, each sheet of said subset of said
plurality of stacked, ring shaped sheets of soft magnetic
material includes a first inner closing portion (318) and
a second inner closing portion (320) which are arranged
25 between each tooth opening and an inner perimeter (316)
of said ring shaped sheet of soft magnetic material,
wherein each first inner closing portion is arranged to
face a corresponding second inner closing portion.

2. Core for an axial flow electrical machine
30 comprising an substantially ring shaped core back and a
plurality of teeth (14), wherein said core back includes:

a plurality of stacked, ring shaped sheets (310) of
soft magnetic material and

a barrier of electrical resistance arranged between two adjacent sheets of soft magnetic material for reducing effects of eddy currents,

wherein each sheet of soft magnetic material in at least a subset of said plurality of stacked, ring shaped sheets of soft magnetic material includes a plurality of first tooth engaging portions (424) and a plurality of second tooth engaging portions (430), a first tooth engaging portion and a second tooth engaging portion being arranged to at least partially define a tooth opening (312), and wherein each sheet of soft magnetic material in at least a subset of said plurality of stacked, ring shaped sheets of soft magnetic material further includes a plurality of first outer closing portions (426) and a plurality of second outer closing portions (432), a first outer closing portion and a second outer closing portion being arranged to face each other between an outer perimeter (322) of said sheet of soft magnetic material and said tooth opening, and wherein said plurality of teeth are made of soft magnetic material and each tooth of said plurality of teeth is arranged in a tooth opening and is extending from said coreback in a direction essentially parallel with an axial direction of said coreback.

3. Core back according to claim 1, wherein each sheet of soft magnetic material comprised in said subset of said plurality of stacked, ring shaped sheets of soft magnetic material further includes a first end portion and a second end portion which are facing each other.

4. Core back according to claim 3, wherein said first end portion and said second end portion are attached to each other.

5. Core according to any one of claims 1-4, wherein said subset of said plurality of stacked, ring shaped

sheets of soft magnetic material include all ring shaped sheets of soft magnetic material in the core back.

6. Method for making a core back for an axial flow electrical machine, said method comprising the acts of:

- 5 forming, from a initial sheet of soft magnetic material, at least one blank comprising a longitudinal coupling strip, a plurality of protrusions extending essentially orthogonal from said coupling strip, wherein each protrusion includes at least one tooth engagement
10 portion and at least one inner closing portion, and
 bending the at least one blank in the plane of the blank moving said at least one inner closing portion of a protrusion towards an inner closing portion of an adjacent protrusion.

- 15 7. Method for making a core back according to claim 6, further comprising the act of attaching a first end portion of said elongated sheet of soft magnetic material to a second end portion of said elongated sheet of soft magnetic material after said act of bending.

- 20 8. Method for making a core back according to any one of claims 6-7, further comprising the act of stacking a plurality of sheets of soft magnetic material after said plurality of sheets have been provided with openings and bent.

- 25 9. Method for making a core back according to any one of claims 6-7, further comprising the act of stacking a plurality of sheets of soft magnetic material after said plurality of sheets have been provided with openings.

- 30 10. Method for making a core back according to any one of claims 6-7, further comprising the act of stacking a plurality of initial sheets of soft magnetic material before said plurality of sheets have been provided with openings and bent and then performing the act of forming
35 essentially simultaneously for all stacked initial sheets of soft magnetic material.

11. Blank for making a core back of an electrical machine, said blank comprising:

a longitudinal coupling strip, and

5 a plurality of essentially equidistantly arranged protrusions extending essentially orthogonal from said coupling strip, wherein each protrusion includes at least one tooth engagement portion and at least one inner closing portion.

10 12. Blank according to claim 11, wherein at least one of said plurality of protrusions includes a top portion essentially forming a truncated triangle of which the tapering sides is formed by a first and a second inner closing portion.

15 13. Blank according to any one of claims 11-12, wherein said longitudinal coupling strip is essentially linear.